

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/003804

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 F28F3/02

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F28F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 32 27 146 A (SCHAEFER WERKE GMBH) 26 January 1984 (1984-01-26) page 10; figures 4,5 ---	1,2
X	PATENT ABSTRACTS OF JAPAN vol. 013, no. 310 (M-850), 14 July 1989 (1989-07-14) -& JP 01 098896 A (NIPPON DENSO CO LTD), 17 April 1989 (1989-04-17) abstract; figures ---	1,2
X	PATENT ABSTRACTS OF JAPAN vol. 018, no. 435 (M-1655), 15 August 1994 (1994-08-15) -& JP 06 129734 A (SHOWA ALUM CORP), 13 May 1994 (1994-05-13) abstract; figures ---	1,2

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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\*&\* document member of the same patent family

Date of the actual completion of the international search

23 June 2004

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30/06/2004

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 123 763 A (SANDEN CORP) 16 August 2001 (2001-08-16) abstract; figures ____	1,2
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 03, 31 March 1997 (1997-03-31) & JP 08 313183 A (NIPPONDENSO CO LTD), 29 November 1996 (1996-11-29) abstract; figures ____	1,2
A	GB 2 197 450 A (PENTAGON RADIATOR) 18 May 1988 (1988-05-18) page 1, line 101 - line 116; figures ____	1,2

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Information on patent family members

International Application No	
PCT/JP2004/003804	

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
DE 3227146	A	26-01-1984	DE	3227146 A1		26-01-1984
JP 01098896	A	17-04-1989		NONE		
JP 06129734	A	13-05-1994		NONE		
EP 1123763	A	16-08-2001	JP DE EP US	2001221588 A 60102725 D1 1123763 A2 2001011586 A1	17-08-2001 19-05-2004 16-08-2001 09-08-2001	
JP 08313183	A	29-11-1996		NONE		
GB 2197450	A	18-05-1988		NONE		